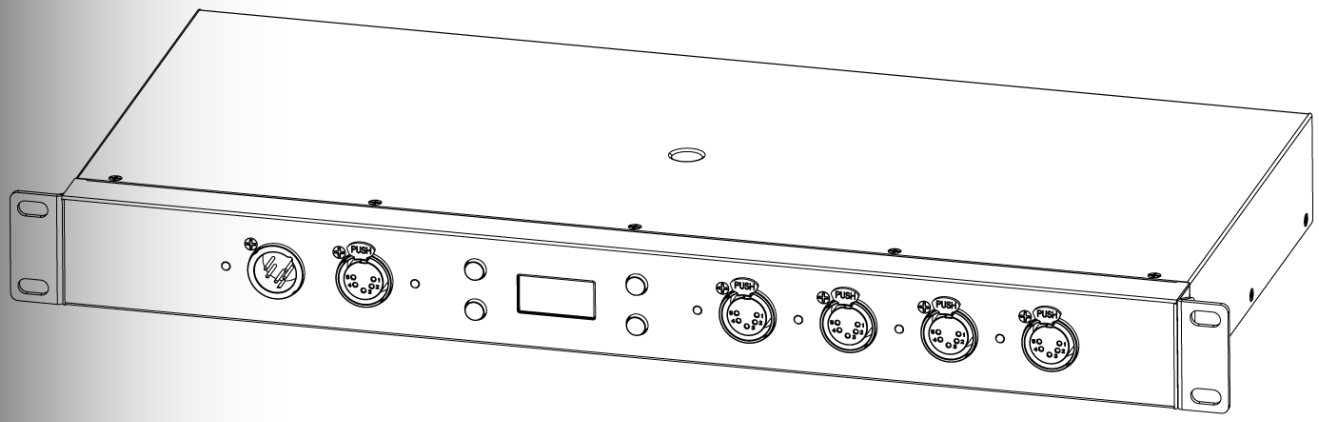
SYNAPSE

User Manual



CHAUVET PROFESSIONAL

Edition Notes

The Synapse 4 User Manual Rev. 2 covers the description, safety precautions, installation, programming, operation, and maintenance of the Synapse 4. Chauvet released this edition of the Synapse 4 User Manual in November 2015.

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Document Printing

For better results, print this document in color, on letter size paper (8.5 x 11 in), double-sided. If using A4 paper (210 x 297 mm), configure your printer to scale the content accordingly.

Intended Audience

Any person in charge of installing, operating, and/or maintaining this product should completely read through the guide that shipped with the product, as well as this manual, before installing, operating, or maintaining this product.

Disclaimer

Chauvet believes that the information contained in this manual is accurate in all respects. However, Chauvet assumes no responsibility for any errors or omissions in this document. Chauvet reserves the right to revise and make changes to the content of this document without obligation that Chauvet notify any person or company of such revision or changes. This does not in any way constitute a commitment by Chauvet to make such changes. Chauvet may issue a revision of this manual or a new edition to incorporate such changes.

Document Revision

The Synapse 4 User Manual Rev. 2 is the first edition of this manual. Go to www.chauvetprofessional.com for the latest version.

Author	Date	Editor	Date
D. Couppe	08/16/15	M. Gregory	8/14/15

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1. Before You Begin

What Is Included

- Synapse 4
- Neutrik powerCON power cord
- Warranty Card
- Quick Reference Guide

Claims

Carefully unpack the product immediately and check the box to make sure all the parts are in the package and are in good condition.
If the box or the contents (the product and included accessories) appear damaged from shipping or show signs of mishandling, notify the carrier immediately, not Chauvet. Failure to report damage to the carrier immediately may invalidate your claim. In addition, keep the box and contents for inspection.
For other issues, such as missing components or parts, damage not related to shipping, or concealed damage, file a claim with Chauvet within 7 days of delivery.

Manual Conventions

Convention	Meaning
1–512	A range of values in the text
50/60	A set of mutually exclusive values in the text
<SET>	A button on the product's control panel
Settings	A product function or a menu option
MENU>Settings	A sequence of menu options
1–10	A range of menu values from which to choose in a menu
Yes/No	A set of two mutually exclusive menu options in a menu
ON	A unique value to be entered or selected in a menu

Symbols

Symbols	Meaning
	Critical installation, configuration, or operation information. Failure to comply with this information may cause the product not to work, damage third-party equipment, or cause harm to the operator.
	Important installation or configuration information. Failure to comply with this information may keep the product from working.
	Useful information.

The term "DMX" used throughout this manual refers to the USITT DMX512-A digital data transmission protocol.

Product At A Glance

Use on Dimmer	X	Auto Programs	X
Outdoor Use	X	Auto-Ranging Power Supply	P
Master/Slave	X	Replaceable Breaker	P
DMX	P	User-Serviceable	X

Safety Notes

Read all the following Safety Notes before working with this product. These notes include important information about the installation, usage, and maintenance of this product.

This product contains no user-serviceable parts. Any reference to servicing in this User Manual will only apply to properly trained Chauvet certified technicians. Do not open the housing or attempt any repairs.

All applicable local codes and regulations apply to proper installation of this product.

Personal Safety

- Always disconnect this product from its power source before servicing.
- Always connect this product to a grounded circuit to avoid the risk of electrocution.

Mounting And Rigging

- The product is not intended for permanent installation.
- This product is for indoor use only! To prevent risk of fire or shock, do not expose this product to rain or moisture. (IP20)
- CAUTION: When transferring product from extreme temperature environments, (e.g. cold truck to warm humid ballroom) condensation may form on the internal electronics of the product. To avoid causing a failure, allow product to fully acclimate to the surrounding environment before connecting it to power.
- Mount this product in a location with adequate ventilation, at least 20 in (50 cm) from adjacent surfaces.
- Make sure there are no flammable materials close to this product while it is operating.
- When hanging this product, always secure to a fastening device using a safety cable.

Power And Wiring

- Always make sure you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label.
- Never connect this product to a dimmer pack or rheostat.
- Never disconnect this product by pulling or tugging on the power cable.

Operation

- Do not operate this product if you see damage on the housing, or cables. Have the damaged parts replaced by an authorized technician at once.
- Do not cover the ventilation slots when operating to avoid internal overheating.
- The maximum ambient temperature is 113 °F (45 °C). Do not operate this product at a higher temperature.
- In case of a serious operating problem, stop using this product immediately!

In the unlikely event that your Chauvet product may require service, contact Chauvet Technical Support.

2. Introduction

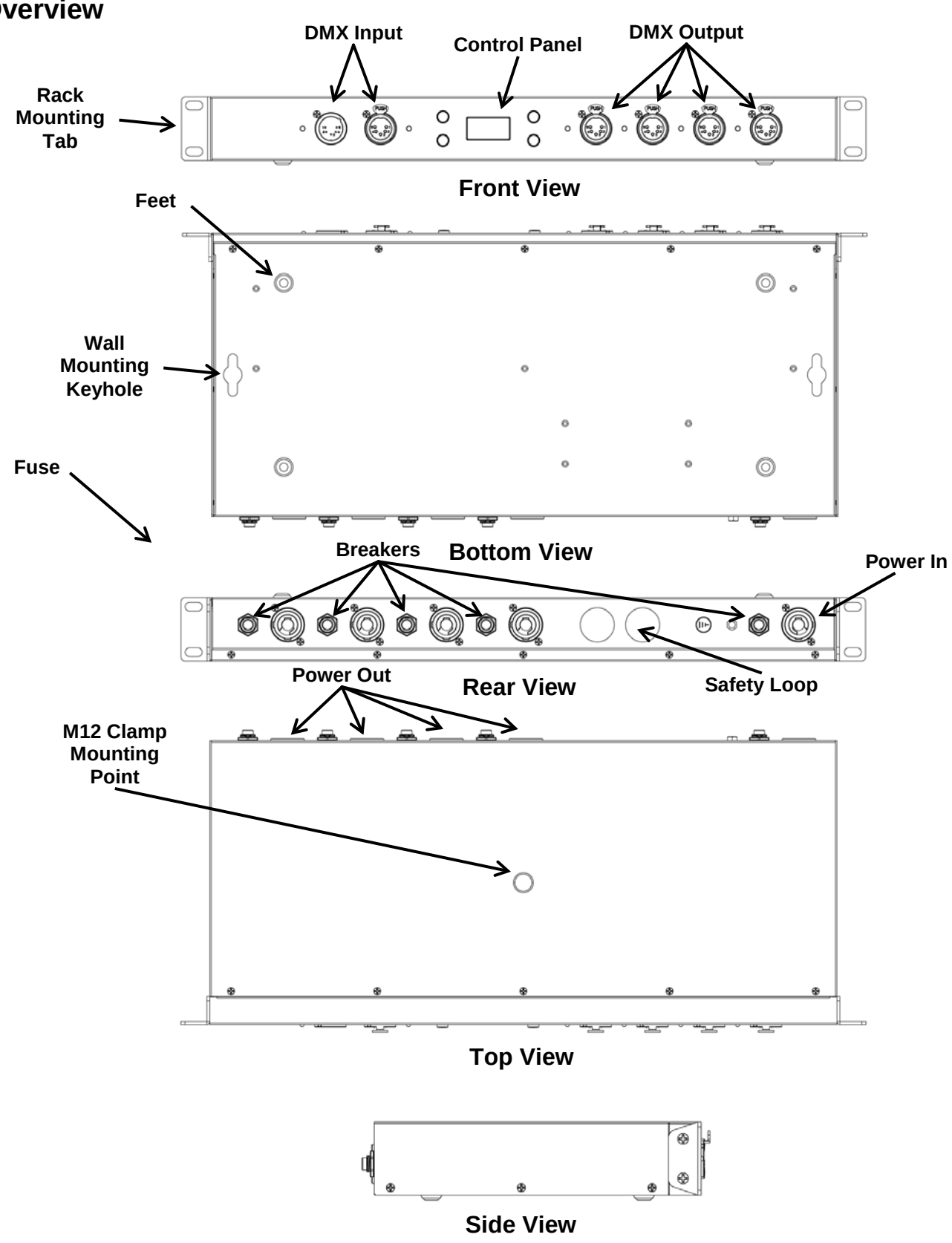
Description

The Synapse 4 functions as a relay pack to control the power sent to individual lighting products. This product takes one powerCON input and branches it into four outputs, each of which can be powered off individually via DMX or an internal timer/scheduler. The product may be rack, truss or wall mounted. The Synapse 4 also includes a 4-port DMX opto-iso, allowing users to easily branch their DMX universe in multiple directions and amplify the signal after a long run.

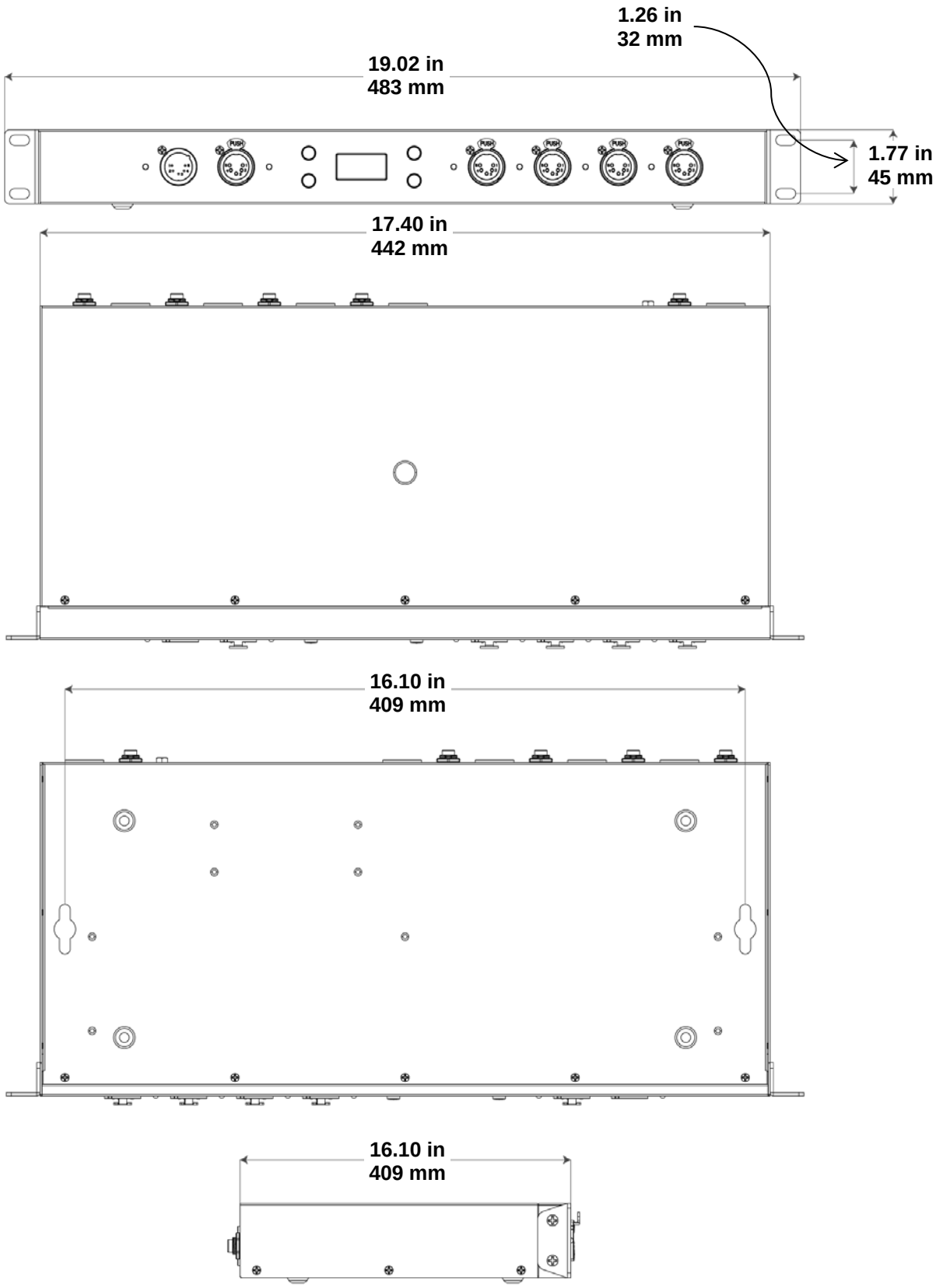
Features

- 1 or 4-channel power output control
- Operating modes:
  - 1-channel: All Power Output On/Off
  - 4-channel: Power Output 1–4 On/Off
- Controllable powerCON relay pack and DMX optically isolated splitter/amplifier
- Compounds the savings of LED fixtures by completely removing power when not in use
- Individually control all 4 relays via DMX, DMX sensing or internal scheduler for specific on/off times every day
- Optically isolated 5-pin DMX splitter provides an easy hub for running DMX to multiple locations
- Convenient mounting options; rack mount, wall mount or clamped to truss

Overview


DMX Input
Control Panel
DMX Output
Rack Mounting Tab
Front View
Feet
Wall Mounting Keyhole
Fuse
Bottom View
Breakers
Power In
Power Out
Rear View
Safety Loop
M12 Clamp Mounting Point
Top View
Side View

Dimensions


1.26 in
32 mm
19.02 in
483 mm
1.77 in
45 mm
17.40 in
442 mm
16.10 in
409 mm
16.10 in
409 mm

3. Setup

AC Power

Each Synapse 4 has an auto-ranging power supply that works with an input voltage range of 100 to 240 VAC, 50/60 Hz. To determine the power requirements for each Synapse 4, refer to the label affixed to the product. You can also refer to the Technical Specifications chart in this manual.
The listed current rating indicates the maximum current draw during normal operation. For more information, you may download Sizing Circuit Breakers from the Chauvet website: www.chauvetprofessional.com.

Always connect this product to a protected circuit with an appropriate electrical ground to avoid the risk of electrocution or fire.

Never connect this product to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

AC Plug

The Synapse 4 comes with a power input cord terminated with a Neutrik powerCON A connector on one end and an Edison plug on the other end (U.S. market). If the power input cord that came with your product has no plug, or if you need to change the Edison plug, use the table below to wire the new plug.

Connection	Wire (U.S.)	Wire (Europe)	Screw Color
AC Live	Black	Brown	Yellow or Brass
AC Neutral	White	Blue	Silver
AC Ground	Green/Yellow	Green/Yellow	Green

Resetting the Breaker

This product is equipped with a resettable circuit breaker on the power input circuit.
If the breaker trips, all sections of this product will lose power. Refer to the following instructions for resetting the breaker.

This product is equipped with a resettable circuit breaker. If the breaker trips, all sections of this product will lose power.

1. Disconnect the product from power.
2. Allow the product to cool for 15 minutes.
3. After 15 minutes, try to reset the breaker by pressing the button until it latches in the operation position.
4. Connect the product to power and continue using as recommended.

Disconnect this product from the power outlet before resetting the breaker.
If the breaker does not reset (the breaker button/lever will not remain inserted/latched), contact Chauvet immediately. This indicates a possible internal malfunction.

DMX Linking

You can link the Synapse 4 to a DMX controller using a 5-pin DMX connection. If using other DMX-compatible products with the Synapse 4, you can control each individually with a single DMX controller.

DMX Personalities

The Synapse 4 uses a 5-pin DMX data connection for the 1- and 4-channel DMX personalities.

- Refer to the Introduction chapter for a brief description of each DMX personality.
- Refer to the Operation chapter to learn how to configure the Synapse 4 to work in these personalities.
- The DMX Values section provides you with detailed information regarding the DMX personalities.

If you are not familiar with or need more information about DMX standards, or the DMX cables needed to link this product to a DMX controller, download the DMX Primer from the Chauvet website: www.chauvetprofessional.com.

Mounting

Before mounting this product, read and follow the Safety Notes. For our CHAUVET Professional line of mounting clamps, go to http://trusst.com/products/.

Orientation

Always mount this product in a safe position and make sure there is adequate room for ventilation, configuration, and maintenance.

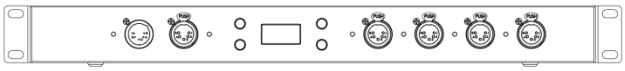
Rigging

Chauvet recommends using the following general guidelines when mounting this product.

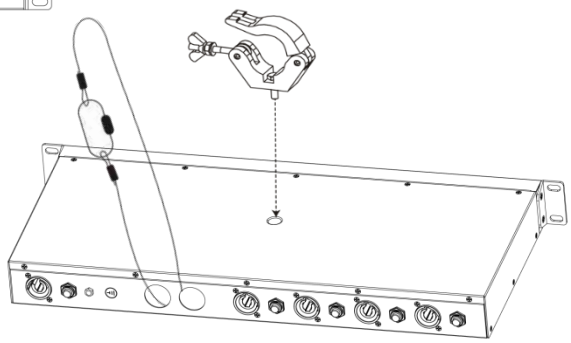
- When selecting an installation location, consider easy access to this product for operation, programming adjustments, and routine maintenance.
- Make sure to mount this product away from any flammable material as indicated in the Safety Notes.
- Never mount in places where rain, high humidity, extreme temperature changes, or restricted ventilation may affect the product.
- If hanging this product, make sure that the mounting location can support the product's weight. See the Technical Specifications for the weight-bearing requirements of this product.
- When hanging this product, always secure to a fastening device using a safety cable. For our CHAUVET Professional line of safety cables, go to http://trusst.com/products/.

Procedure

The Synapse 4 fits nicely in a standard 19" rack using the mounting tabs included. You may also choose to attach a M12 mounting clamp for hanging or simply place it on its feet on a flat level surface. Using the 2 keyhole cutouts, the Synapse 4 also gives you the option of mounting it to a wall. You must supply your own mounting hardware. Make sure all hardware and mounting surfaces are capable of supporting the weight of this product. For our CHAUVET Professional line of mounting clamps, go to http://trusst.com/products/.

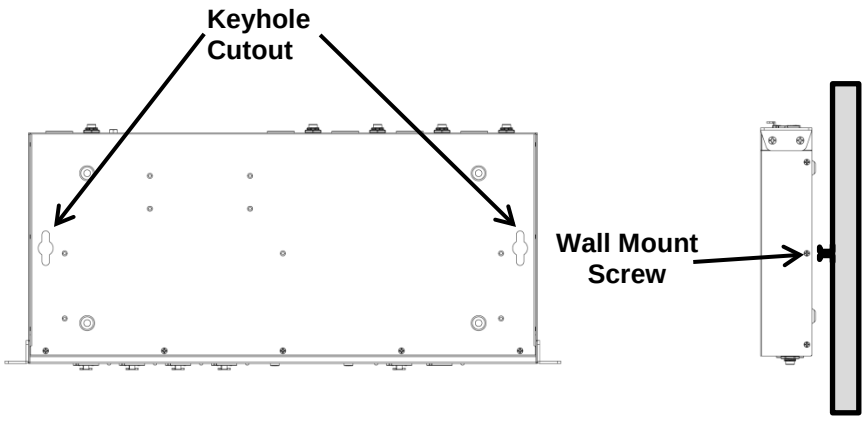


Floor Mounting



Overhead Mounting

Mounting Diagram



Wall Mounting

4. Operation

Control Panel Description

Button	Function
<MENU>	Exits from the current menu or function
<ENTER>	Enables the currently displayed menu or sets the currently selected value in to the current function
<UP>	Navigates upward through the menu list or increases the numeric value when in a function
<DOWN>	Navigates downward through the menu list or decreases the numeric value when in a function

Control Options

You can set the Synapse 4 starting address in the **001**–**512** DMX range. This enables control of up to 4 outputs in the 4-channel **4CH** personality.

Programming

Refer to the Menu Map to understand the menu options. The menu map shows the main level and a variable number of programming levels for each option.

- To go to the desired main level, press **<MENU>** repeatedly until the option shows on the display. Press **<ENTER>** to select. This will take you to the first programming level for that option.
- To select an option or value within the current programming level, press **<UP>** or **<DOWN>** until the option shows on the display. Press **<ENTER>** to select. In this case, if there is another programming level, you will see that first option, or you will see the selected value.
- Press **<MENU>** repeatedly to exit to the previous main level.

Menu Map

Main Level	Programming Levels				Description
Power Setup	Turn Off				Turns power to the power outputs on the back of the product off
	Turn On				Turns power to the power outputs on the back of the product on
	On/Off Via DMX				Turns power on/off thru DMX control
	On If DMX On				Turns power on/off as a DMX signal is detected
	Scheduler				Sets product to follow the assigned schedule
Output Delay	All Power Ports	All Ports On		0-120 S	Sets a time delay to the power output
		All Ports Off			
	Unit Power Port	Power Port 1	Power Port 1 On		
			Power Port 1 Off		
		Power Port 2	Power Port 2 On		
			Power Port 2 Off		
		Power Port 3	Power Port 3 On		
			Power Port 3 Off		
		Power Port 4	Power Port 4 On		
			Power Port 4 Off		
Date & Time	Current Time 12/12/2014 00:00 Clock Setting		12/12/2014 00:00		Sets the current date and time

Menu Map (Cont.)

Main Level	Programming Levels					Description
Scheduler	Event 1–8 On/Off	Scheduler On/Off		On		Activates the scheduler for the set event
				Off		
		Power Output	All Power Ports	All Ports On	0-120 S	Sets which ports will turn on/off during the event
				All Ports Off		
			Power Port 1	Power Port 1 On		
				Power Port 1 Off		
			Power Port 2	Power Port 2 On		
				Power Port 2 Off		
			Power Port 3	Power Port 3 On		
				Power Port 3 Off		
			Power Port 4	Power Port 4 On		
				Power Port 4 Off		
		Week Setup		Monday–Sunday Everyday		Sets the days the event will run
		Time Setup		00:00		Sets the time the event will run
Back Light	On					Display backlight always on
	10S					Turns off display backlight after 10 sec of inactivity
	20S					Turns off display backlight after 20 sec of inactivity
	30S					Turns off display backlight after 30 sec of inactivity
Information	Fixture Hours					Shows total product hours
	Version					Shows installed software version
DMX Address	1–512					Selects DMX address (highest channel restricted to personality chosen)
DMX Channels	1CH					1-channel: power port control
	4CH					4-channel: individual power port control

Configuration

The Synapse 4 allows control from both the control panel and remotely via DMX.

Power Setup

This option chooses how the power outputs are controlled.

1. Go to the **Power Setup** main level.
2. Select the desired control function.
   a. **Turn Off** – turns all power outputs off
   b. **Turn On** – turns all power outputs on
   c. **On/Off Via DMX** – control of the power outputs is controlled via DMX
   d. **On If DMX On** – Turns power outputs on/off as DMX is detected.
   e. **Scheduler** – Product power output is controlled by the events set in the scheduler

Output Delay Setting

This option sets how long the power outputs are delayed from turning on/off. This option is useful when turning on more than one high power draw product at the same time. Set the Synapse 4 or each of its 4 outputs to turn on at a different time to avoid overloading a power system.

1. Go to the **Output Delay** main level.
2. Choose **All Power Ports** or **Unit Power Port**
   a. Select **All Power Ports**
      · Select **All Power Ports On**
      · Set the delay to turn on (**0-120 s**).
      · Select **All Power Ports Off**
      · Set the delay to turn off (**0-120 s**).
   b. Select **Unit Power Port**
      · Select **Power Port** (**1**, **2**, **3**, or **4**)
      · Select **Power Port** (**1**, **2**, **3**, or **4**) **On**
      · Set the delay to turn on (**0-120 s**).
      · Select **Power Port** (**1**, **2**, **3**, or **4**) **Off**
      · Set the delay to turn off (**0-120 s**).
      · Repeat for each power port number

Date and Time Setting

This option sets the date and time. The date and time setting is needed in order for the scheduler option to work correctly.

1. Go to the **Date & Time** main level.
2. Select **Clock Setting**.
   a. Enter the month (**00/**)
   b. Enter the date (**/00/**)
   c. Enter the year (**/2015**)
   d. Enter the hour (**00:**)
   e. Enter the minutes (**:00**)

Schedule Setup

This option allows you to set 8 different events that turn on/off each of the power outputs at specific scheduled times.

1. Go to the **Scheduler** main level.
2. Select **Event 1–8**
   - Select **On** or **Off**.
3. Select **SchedulerOn/Off**
   - Select **On** or **Off**
4. Select **Power Output**
   a. Choose **All Power Ports**
      - Select **All Power Ports On**
      - Set the delay to turn on (**0-120 s**).
      - Select **All Power Ports Off**
      - Set the delay to turn off (**0-120 s**).
   b. Choose **Power Port** (**1**, **2**, **3**, or **4**)
      - Select **Power Port** (**1**, **2**, **3**, or **4**) **On**
      - Set the delay to turn on (**0-120 s**).
      - Select **Power Port** (**1**, **2**, **3**, or **4**) **Off**
      - Set the delay to turn off (**0-120 s**).
      - Repeat for each power port number
5. Select **Week Setup**
   - Select **Monday** – **Friday** or **Everyday**
6. Select **Time Setup**
   a. Enter the hour (**00:**)
   b. Enter the minutes (**:00**)

Backlight

This setting allows you to set the amount of time the backlight on the Synapse 4's display stays on after the last button is pressed on the control panel.

1. Go to the **Back Lite** main level.
2. Select **On** (remains on), **10S** (10 seconds), **20S** (20 seconds), or **30S** (30 seconds).

Software Information

This option shows what version of software the Synapse 4 is running.

1. Go to the **Information** main level.
2. Select **Version** and the version number will show on the display.

Fixture Hours

This option shows the total amount of hours the Synapse 4 has been turned on.

1. Go to the **Information** main level.
2. Select **Fixture Hours** and the total number of hours will show on the display.

DMX Control

In this mode, each product will respond to a unique starting address from the DMX controller. All products with the same starting address will respond in unison.

1. Select a DMX personality as shown in DMX Personality.
2. Go to the **DMX Address** main level.
3. Select the starting address (**001–512**).

The highest recommended starting address for each DMX mode is as follows:

DMX Personality	DMX Address
1 Ch	512
4 Ch	509

DMX Personality

This setting allows you to choose a particular DMX personality.

1. Go to the **DMX Channel** main level.
2. Select the desired personality (**1 Ch,** or **4 Ch**).

- **See the DMX Values section for the highest starting address you can select for each personality.**
- **Make sure that the starting addresses on the various products do not overlap due to the new personality setting.**

DMX Values

1CH

Channel	Function	Value	Percent/Setting
1	**Power Output On/Off**	000 ó 152 153 ó 255	No function Turn on
		255 ó 103 102 ó 000	No function Turn off

4CH

Channel	Function	Value	Percent/Setting
1	**Power Output 1 On/Off**	000 ó 152 153 ó 255	No function Turn on #1
		255 ó 103 102 ó 000	No function Turn off #1
2	**Power Output 2 On/Off**	000 ó 152 153 ó 255	No function Turn on #2
		255 ó 103 102 ó 000	No function Turn off #2
3	**Power Output 3 On/Off**	000 ó 152 153 ó 255	No function Turn on #3
		255 ó 103 102 ó 000	No function Turn off #3
5	**Power Output 4 On/Off**	000 ó 152 153 ó 255	No function Turn on #4
		255 ó 103 102 ó 000	No function Turn off #4

5. Technical Information

Product Maintenance

To maintain optimum performance and minimize wear, you should clean this product frequently. Usage and environment are contributing factors in determining the cleaning frequency.
As a rule, clean this product at least twice a month. Dust build-up reduces performance and can cause overheating. This can lead to reduced product life and increased mechanical wear.
To clean your product:

1. Unplug the product from power.
2. Wait until the product is at room temperature.
3. Use a vacuum (or dry compressed air) and a soft brush to remove dust collected on the external vents.
4. Clean all external surfaces with a mild solution of non-ammonia glass cleaner or isopropyl alcohol.
5. Apply the solution directly to a soft, lint-free cotton cloth or a lens cleaning tissue.
6. Wipe any dirt or grime to the outside edges of the surface.
7. Gently polish the surfaces until they are free of haze and lint.

Always dry the external surfaces thoroughly and carefully after cleaning them.

6. Technical Specifications

Dimensions and Weight

Length	Width	Height	Weight
19.0 in (483 mm)	7.87 in (200 mm)	1.75 in (45 mm)	6 lb (2.8 kg)

Note: Dimensions in inches rounded to the nearest decimal digit.

Power

Power Supply Type	Range	Voltage Selection
Switching (internal)	100–240 VAC, 50/60 Hz	Auto-ranging

Parameter	120 VAC, 60 Hz	230 VAC, 50 Hz
Consumption	4 W	4 W
Current	0.077 A	0.048 A
Breaker	20 A, 250 V	20 A, 250 V

Power I/O	U.S./Canada	Worldwide
Power input connector	Neutrik powerCON A	Neutrik powerCON A
Power cord plug	Edison (U.S.)	Local plug

Thermal

Max. External Temperature	Cooling System
113 °F (45 °C)	Convection

DMX

I/O Connectors	Connector Type	Channel Range
5-pin XLR	Sockets	1 or 4

Ordering

Product Name	Item Code	UPC Number
Synapse 4	03081088	781462214364

UL 1573
CSA C22.2 No. 166
E113093

Returns

You must send the product prepaid, in the original box, and with the original packing and accessories. Chauvet will not issue call tags.
Call Chauvet and request a Return Merchandise Authorization (RMA) number before shipping the product. Be prepared to provide the model number, serial number, and a brief description of the cause(s) for the return.
Clearly label the package with an RMA number. Chauvet will refuse any product returned without an RMA number.

DO NOT write the RMA number directly on the box. Instead, write it on a properly affixed label.

Once you have received the RMA number, include the following information on a piece of paper inside the box:

- Your name
- Your address
- Your phone number
- The RMA number
- A brief description of the problem(s)

Be sure to pack the product properly. Any shipping damage resulting from inadequate packaging will be the customer's responsibility. FedEx packing or double-boxing is recommended.

Chauvet reserves the right to use its own discretion to repair or replace returned product(s).

Contact Us

USA WORLD HEADQUARTERS

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Outside the U.S., United Kingdom, Ireland, Mexico, or Benelux contact the dealer of record. Follow their instructions to request support or to return a product. Visit our website for contact details.